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BEFORE THE

Federal Communications Commission

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20554

In the Matter of

Redevelopment of Spectrum to
Encourage Innovation in the Use
of New Telecommunications
Technologies

)
) ET Docket No. 92-9
)
) RM-7881
) RM-8004
)

To: The Commission

REPLY COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

Wayne V. Black
Christine M. Gill
Tamara Y. Davis

Keller and Heckman
1001 G Street, N.W.
Suite 500W
Washington, D.C. 20001
(202) 434-4100

Its Attorneys

Dated: January 27, 1993

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SUMMARY

The American Petroleum Institute's (API) members operating microwave system in the 2 GHz band will be significantly affected by the Commission's decision to reallocate the 2 GHz band for co-primary use by emerging new technologies. Nonetheless, the Commission has rapidly moved forward with its reallocation proposal, and is now ready to adopt specific technical rules for the migration of existing 2 GHz users into higher frequency bands. API generally supports adoption of the microwave spectrum sharing and rechannelization plans proposed by the Commission in the ET Docket No. 92-9 Further Notice of Proposed Rule Making. The Commission is urged to carefully review the alternate channelization plans and select the one which will best provide (1) spectrum efficiency, (2) availability of balanced mix of wideband and narrowband channels, and (3) maximum competition among microwave equipment manufacturers.

API is primarily concerned that the Commission not adopt a channelization plan that eliminates narrowband channels from certain frequency bands. The Commission is reminded that narrowband channels are essential to private microwave operations, and is urged to avoid proposals eliminating their availability.

While API agrees that the same interference criteria can be applied to private and common carrier microwave systems, it does not support requiring Part 94 users to follow Part 21 coordination procedures. Nor does it support requiring private users to show substantial justification for access to wideband channels or establishment of bounty hunter procedures to enforce loading requirements.

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**REPLY COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE**

The American Petroleum Institute (API), by its attorneys and pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission (Commission or FCC), hereby submits these Reply Comments in response to the Further Notice of Proposed Rule Making adopted by the Commission on August 5, 1992 in the above-styled proceeding.^{1/}

^{1/} Further Notice of Proposed Rule Making, (FCC 92-357), ET Docket No. 92-9, 57 Fed. Reg. 42916 (September 17, 1992). The time for filing Comments in this proceeding was extended to December 11, 1992. Order Extending Time For Comments And Reply Comments, DA 92-1599, Released November 24, 1992. The time for filing Reply Comments in this proceeding was further extended to January 27, 1993 Order Extending Time For Reply Comments, DA 93-5, Released January 7, 1993.

I. INTRODUCTION

1. API filed comments in this proceeding on December 11, 1992, generally supporting the proposed channel plan for the bands above 3 GHz in the Commission's Further Notice of Proposed Rule Making. However, API expressed its concern that bands below 3700 MHz were not considered as a spectrum home for displaced 2 GHz licensees, and urged the Commission to reconsider providing relief in the bands 1710-1850 MHz or 3600-3700 MHz for existing users needing longer microwave paths.

2. API also generally supported the idea of spectrum sharing between the common carrier Point-to-Point Microwave Service and the Private Operational-Fixed Microwave Service (POFS) as an equitable and reasonable solution for migrating 2 GHz users. However, common carrier and POFS users have different spectrum demands. For example, many POFS users require narrow bandwidths of spectrum in certain applications, while common carriers generally require broader bandwidths. Therefore, the channelization plan ultimately adopted by the Commission must achieve an appropriate balance between these two services.

3. Many other commenters in this proceeding supported the Commission's proposed channelization plan for the bands above 3 GHz. However, a few commenters proposed an alternate channelization plan which varies significantly from that proposed by the Commission based on a plan put forth by Alcatel ("FCC/Alcatel Plan"). The Telecommunications Industry Association Fixed Point-to-Point Communications Section ("TIA") and Harris Corporation-Farion Division, Digital Microwave Corporation and Telesciences, Inc. ("Harris") filed comments proposing alternate channelization plans (collectively the "TIA/Harris Plan") and significant new regulations to govern licensing and operation in these shared bands. API primarily wishes to address these alternate channelization plans and technical proposals in its Reply Comments.

II. REPLY COMMENTS

4. API strongly supports the Commission taking action to rechannelize the frequency bands above 3 GHz to accommodate displaced 2 GHz users. If POFS users are to be forced to relocate, replacement spectrum must be available to accommodate critical needs. Because the Commission now has before it two different channelization plans, it must decide which plan best serves the public interest. From a

user's perspective, API believes that the Commission should adopt a plan which maximizes the opportunity for different equipment vendors to participate in this market and which accommodates the needs of all users. Among API members, no consensus has developed over whether the original FCC/Alcatel plan based on 1.6 MHz channels or the TIA/Harris channel plan based on 1.25 MHz channels is preferable. There are benefits and drawbacks to both proposals. Ideally, API prefers a channelization plan that permits competition among microwave equipment manufacturers, since a robust market will best serve microwave users. Hence, API believes that the channelization plan ultimately adopted by the Commission should not favor one equipment manufacturer over another.^{2/}

5. While expressing no strong preference for the 1.25 MHz-based channel plan over the 1.6 MHz-based channel plan, any plan the Commission adopts should have a sufficient mix of channel bandwidths for both narrowband and wideband operations. API member companies require a range

^{2/} API understands that Alcatel will file a further modified channel plan proposal in its Reply Comments. This plan purports to address and eliminate some of the discrepancies between microwave equipment manufacturers. API is generally supportive of the type of plan that most reflects a consensus among manufacturers, but encourages the Commission to carefully review this and other plans to select a plan that is most suitable to both common carrier and POFS users.

of different bandwidths for different operations. For example, backbone systems such as those used for communications along pipelines require wideband channels. However, narrowband channels are generally more suitable for transmission of critical communication between shore locations and offshore platforms and other remote exploration sites. Therefore, a sufficient balance of both wide and narrow bandwidths in all frequency bands is absolute essential to meet API members' continuing communications requirements.

6. API ultimately favors a channelization plan which (1) accommodates diverse operating needs of both private and common carriers, and (2) is generally agreed upon by a consensus of microwave equipment manufacturers to promote a competitive marketplace.

A. Rechannelization Plan

7. Because of the importance of preserving the existing narrowband channels, API opposes the TIA/Harris channelization plan at 4 GHz because it eliminates all the narrowband channels in that range.^{3/} While TIA/Harris portray their plan as an industry consensus, this is clearly

^{3/} Comments of TIA and Harris at Appendix, A-1.

not the case with regard to the plan for the 4 GHz band. Their proposal is designed solely to meet common carrier needs while ignoring POFS requirements. API strongly urges the Commission to adopt its original proposal for the 4 GHz band which accommodates 400 kHz, 800 kHz, 1.6 MHz, 5 MHz, 10 MHz and 20 MHz channels. POFS access to the 4 GHz band is particularly critical since this band may be the only band that can accommodate the needed longer transmission paths.

8. The TIA/Harris Plan for the lower 6 GHz band does include narrowband channels although a different mix of narrowband channels is proposed (i.e., 1.25 MHz, 2.5 MHz, 3.75 MHz, 5 MHz, 10 MHz, 15 MHz and 30 MHz) than the FCC/Alcatel Plan (400 kHz, 800 kHz, 1.6 MHz, 5 MHz, 10 MHz and 30 MHz). API favors availability of a wide mix of narrowband channels and its members do have requirements for channels as narrow as 800 kHz. Therefore, the FCC/Alcatel plan may be preferable for the lower 6 GHz band. The same is true of the FCC/Alcatel plan for the upper 6 GHz plan.

9. API also recognizes that use of a narrowband frequency can potentially block access to wideband frequencies within the same band. This could result in inefficient use of the spectrum. Therefore, API suggests

that the applicant or its frequency coordinator be required to certify that the frequencies selected will block as few of the wider frequencies in the same band as possible.

10. As mentioned, API is particularly concerned that the channelization plan ultimately adopted fully consider the POFS users' need for longer microwave paths. The Commission must adopt a plan which assures POFS users access to the lower frequency ranges -- 3.7-4.2 GHz and 5.925-6.425 GHz bands -- because the propagation characteristics of these bands are the most similar to those in the 2 GHz band. As API has also repeatedly urged, the Commission should provide other lower range frequency options for displaced 2 GHz users such as access to government spectrum at 1.7-1.85 GHz.

B. Coordination Procedures and
Technical Standards

11. API continues to support the Commission's proposal to maintain current coordination procedures in the respective microwave service bands. Adhering to the current coordination procedures for each service will be least disruptive to existing users. API opposes TIA/Harris and AT&T's proposal that all microwave users follow Part 21 rules for coordination of both common carrier and private

microwave systems.^{4/} Part 21 rules require prior coordination with existing users in the same area and with other previously-filed applications whose facilities could affect or be affected by the new proposal in terms of frequency interference or restricted ultimate system capacity.^{5/} Part 21 also requires a 30-day notification period in which affected licensees or applicants have an opportunity to oppose the new entrant. This procedure is unnecessarily cumbersome. The Part 94 coordination procedures, in contrast, do not require a prior notification period. Notification safeguards are automatically included in the coordination process, and interference problems are typically resolved without Commission intervention. Based on extensive experience, Part 94 procedures have served the POFS community well and API does not believe that adding additional notification procedures will improve the overall coordination process.

12. API strongly opposes strict loading requirements for wideband channels (greater than 15 MHz) and the use of auditors to police loading requirements as

^{4/} Comments of TIA at 13, Harris at 14, and AT&T at Appendix E, page 1.

^{5/} See 47 C.F.R. § 21.100.

advanced by TIA and Harris.^{6/} API recognizes that phantom loading may be a perceived problem in the common carrier community, and API agrees that no formal approval should be given to this industry's practice of reserving growth channels on coordinator's databases. However, private users do not have the same incentives to over-build systems. Private microwave licensees, unlike common carriers, do not use microwave frequencies for their primary business activity. API member companies holding POFS licenses use these facilities in an ancillary, albeit critical, capacity to support their primary business -- providing the safe processing and refining of petroleum and natural gas, and the safe delivery of these products to commercial, industrial and residential customers. Prudent long-term planning usually dictates that there be some reserve capacity on a system initially so that future growth requirements can be met. For example, a wideband private microwave system may be necessary to link critical communications between pipeline facilities, but these facilities may be lightly loaded initially until the traffic along the pipeline increases. POFS users must have the flexibility to design long-term systems to meet their needs without unrealistic, stringent initial loading requirements.

^{6/} Comments of TIA at 10 and Harris at 12.

API also recommends allowing users to count high-speed computer circuit occupancy toward channel loading.

13. Nor does API believe that the Commission should establish a "bounty hunter" mechanism as suggested by TIA/Harris^{7/} by authorizing independent auditors to police loading of POFS systems. While such a mechanism may be appropriate for common carriers which have greater incentives to warehouse spectrum, this procedure is totally unjustified for the POFS community. API opposes introducing these types of stringent requirements for POFS users.

14. Furthermore, API recommends that the Commission not impose any loading requirements on the wideband frequencies where the users are forced to use the wideband channels due to unavailability of narrowband channels. Everyone recognizes that we are moving into a even more congested spectrum environment with the reallocation of the 2 GHz band to new technologies. Users may be forced to select less than ideal frequency channels merely due to spectrum congestion. Therefore, the Commission should not impose overly rigid requirements which will necessitate filing frequent waiver requests.

^{7/} TIA Comments at 10, Harris Comments at 12.

15. API also opposes Harris' proposal to require submission of contracts for the resale of excess capacity in order to justify requested bandwidth.^{8/} Harris' comments regarding users receiving an economic gain from this relatively small portion of spectrum are misplaced. While there may be initial reserve capacity on some POFS systems, this capacity may only be temporarily available for resale since POFS systems are constructed to accommodate future growth. Since appropriate customers must be carefully selected to ensure compatibility with the POFS licensee's operations, identifying potential customers is often not a rapid process. Furthermore, decisions about possible resale may not be made until after the system is in operation. Accordingly, it is irrational to require contracts to be filed before the system is even licensed. Moreover, there is no evidence that a problem exists in the POFS community to justify this requirement being imposed on POFS licensees. This proposal is burdensome, unnecessary, and should not be adopted.

16. API supports TIA's and Harris' recommendation of a five-year phased-in approach to digital spectrum efficiency standards, but opposes any immediate mandated

^{8/} Comments of Harris at 12.

transition to digital standards.^{9/} A wholesale conversion to digital equipment is expensive and disruptive to existing microwave systems. New digital equipment standards could also force users to buy certain equipment from a particular manufacturer, especially for systems with longer paths. API believes that the marketplace should determine when and if new digital standards are appropriate.

17. API also reiterates the importance of grandfathering existing analog equipment. Analog equipment is still widely used in the private arena and API sees no benefit to forcing users to abandon this equipment before the end of its useful life.

18. API continues to oppose the imposition of strict antenna standards on POFS users migrating to bands shared with common carriers.^{10/} API recognizes that stricter antenna standards may be preferable for common carrier operations and could increase frequency reuse. However, POFS users should be allowed to continue using antennas meeting the standards under Part 94, particularly

^{9/} Comments of TIA at 10 and Harris at 17.

^{10/} Therefore, API opposes the Comments of AT&T at Appendix, p. 1 and Comments of MCI at 2.

for systems being relocated from the 2 GHz band.^{11/} The existing POFS towers may be unable to support the heavier high performance antennas required by stricter antenna standards. In many cases, POFS users may not be able to upgrade their antennas to Standard A requirements without having to either replace their towers or find other antenna sites. In the situation created by the reallocation of the 2 GHz band which will force users to relocate to higher bands, added difficulties should not be imposed which could make relocation even more complicated, time-consuming and costly.

19. API supports the views of AT&T which seek specific provisions that will permit growth of existing coordinated systems.^{12/} Likewise, API supports Alcatel's position that existing systems should be permitted to expand without excessive system retuning, or without a rule waiver.^{13/} API agrees that existing licensees should be allowed to plan for future growth of their systems, and that such growth will not be unduly burdened by regulatory limitations.

^{11/} See, 47 C.F.R. § 94.75.

^{12/} Comments of AT&T at Appendix E, p. 2.

^{13/} Comments of Alcatel at 6.

C. Use of Government Spectrum

20. Finally, there is a consensus among the commenters that the Commission must continue to explore the possibility of making government spectrum available for private use.^{14/} API agrees with other commenters that the Commission should accelerate the negotiations with NTIA regarding the use of 1710-1850 MHz and 3500-3700 MHz as replacement spectrum for displaced 2 GHz users.

III. CONCLUSION

21. API supports a rechannelization plan that balances the varying interests of both common carrier and private microwave users. API urges the Commission to adopt a channelization plan and technical rules for migration of displaced 2 GHz users into higher frequency bands that (1) are spectrum efficient, (2) provide a balanced mix of available wideband and narrowband channels, favoring relocation of POFS users to the lower frequency bands, (3) most reflect a consensus of the microwave equipment

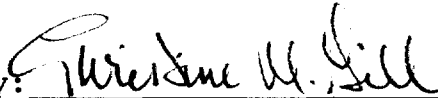
^{14/} See Comments of Utilities Telecommunications Council at 5, AT&T at 6, Motorola at 9-10, GTE at 8, Northern Telecom at 6.

manufacturers and (4) do not impose burdensome, unnecessary loading requirements on POFS licensees.

WHEREFORE, THE PREMISES CONSIDERED, the American Petroleum Institute urges the Commission to take action in this proceeding in a manner consistent with the views expressed herein.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE

By: 
Wayne V. Black
Christine M. Gill
Tamara Y. Davis

Keller and Heckman
1001 G Street, N.W.
Suite 500W
Washington, D.C. 20001
(202) 434-4100

Its Attorneys

Dated: January 27, 1993

CERTIFICATE OF SERVICE

I, Jacqueline Jenkins, a secretary in the law firm of Keller and Heckman, hereby certify that a copy of the foregoing Reply Comments of the American Petroleum Institute has been served this 27th day of January, 1993 via hand delivery to the following:

The Honorable Alfred C. Sikes
Chairman
Federal Communications Commission
1919 M Street, N.W., Room 814
Washington, D.C. 20554

The Honorable James H. Quello
Commissioner
Federal Communications Commission
1919 M Street, N.W., Room 802
Washington, D.C. 20554

The Honorable Sherrie P. Marshall
Commissioner
Federal Communications Commission
1919 M Street, N.W., Room 826
Washington, D.C. 20554

The Honorable Andrew C. Barrett
Commissioner
Federal Communications Commission
1919 M Street, N.W., Room 844
Washington, D.C. 20554

The Honorable Ervin S. Duggan
Commissioner
Federal Communications Commission
1919 M Street, N.W., Room 832
Washington, D.C. 20554

Dr. Thomas P. Stanley
Chief, Office of Engineering and Technology
Federal Communications Commission
2025 M Street, N.W., Room 7002
Washington, D.C. 20554

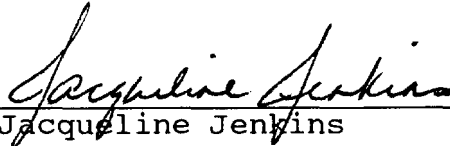
Mr. Robert Pepper
Chief, Office of Plans and Policy
Federal Communications Commission
1919 M Street, N.W., Room 822
Washington, D.C. 20554

Mr. Ralph Haller
Chief, Private Radio Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, D.C. 20554

Cheryl A. Tritt
Chief, Common Carrier Bureau
Federal Communications Commission
1919 M Street, N.W., Room 500
Washington, D.C. 20554

Bruce A. Franca, Deputy Chief
Office of Engineering and Technology
Federal Communications Commission
2025 M Street, N.W., Room 7002
Washington, D.C. 20554

Fred Thomas
Office of Engineering and Technology
Federal Communications Commission
2025 M Street, N.W., Room 7002
Washington, D.C. 20554


Jacqueline Jenkins